

**WHAT IS CLAIMED IS:**

- 1           1.       A method for exposing a peripheral area of a wafer,  
2       comprising:  
3           (i)       exposing a photoresist film formed on a peripheral area of a  
4       wafer by radiating a light toward the peripheral area of the wafer while  
5       moving the wafer;  
6           (ii)      inspecting whether the light is uniformly radiated onto a  
7       predetermined width of the peripheral area of the wafer when the exposing is  
8       carried out; and  
9           (iii)     adjusting a position of the light to be radiated onto the  
10      peripheral area of the wafer if the light deviates from the predetermined  
11      width of the peripheral area of the wafer.
- 1           2.       The method as claimed in claim 1, wherein, in (i), the wafer is  
2       moved in a direction parallel to a flat zone of the wafer when the light is  
3       radiated onto the flat zone of the wafer and the wafer is horizontally rotated  
4       when the light is radiated onto the peripheral area of the wafer.
- 1           3.       The method as claimed in claim 1, wherein, in (i), the light is  
2       radiated over the peripheral area and an outer area beyond an edge portion  
3       of the wafer.

- 1           4.       The method as claimed in claim 1, wherein (ii) comprises:
- 2               a)       detecting the light radiated to an outer area beyond an edge
- 3               portion of the wafer and outputting an optical datum thereof;
- 4               b)       comparing the outputted optical datum with a reference
- 5               optical datum to determine whether the outputted optical datum is within a
- 6               predetermined, allowable range of values; and
- 7               c)       calculating a position datum for the light to be radiated based
- 8               on an error value between the reference optical datum and the outputted
- 9               optical datum.

- 1           5.       The method as claimed in claim 4, wherein the optical datum
- 2               is an intensity of radiation of the light detected by a light detecting section.

- 1           6.       The method as claimed in claim 4, wherein the reference
- 2               optical datum is an optical datum that is detected when the predetermined
- 3               width of the peripheral area of the wafer is uniformly exposed to the light.

- 1           7.       The method as claimed in claim 1, wherein (ii) comprises:
- 2               a)       detecting a distance between an edge portion of the wafer,
- 3               which includes a portion exposed to the light, and a reference point, which is
- 4               positioned on an extension line extended from a center of the wafer beyond
- 5               the edge portion of the wafer;
- 6               b)       comparing a detected distance datum with a reference
- 7               distance datum to determine whether the detected distance is within a
- 8               predetermined, allowable range of values; and

9                   c)       calculating a precise position datum for the light to be  
10       radiated based on an error value between the reference distance datum and  
11       the detected distance datum.

1                   8.       The method as claimed in claim 7, wherein the reference  
2       distance datum is determined as a distance between the edge portion of the  
3       wafer and the reference point, which is detected when the predetermined  
4       width of the peripheral area of the wafer is uniformly exposed to the light.

1                   9.       The method as claimed in claim 1, wherein, prior to (i), an  
2       error value between a distance datum from an edge portion of the wafer to a  
3       light detecting section and a reference distance datum is obtained, and a  
4       position datum for the light to be radiated is calculated to compensate for the  
5       position of the light.

1                   10.      The method as claimed in claim 1, wherein, in (iii), the  
2       position of the light is moved to an inner portion or an outer portion of the  
3       wafer based on a position datum of the light inspected in (ii).

1                   11.      An apparatus for exposing a peripheral area of a wafer, the  
2       apparatus comprising:

3                   a wafer chuck on which a wafer formed with a photoresist film is  
4       loaded;

5                   a first driving section operatively associated with the wafer chuck to  
6       drive the wafer chuck;

7 a light source installed above the peripheral area of the wafer to  
8 generate a light;

9 an inspecting section for inspecting whether the light is precisely  
10 radiated from the light source onto the peripheral area of the wafer; and

11 a second driving section operatively associated with both the  
12 inspecting section and the light source for driving the light source to  
13 precisely radiate the light on the peripheral area of the wafer.

1 12. The apparatus as claimed in claim 11, wherein the first  
2 driving section comprises:

3 a rotating shaft supporting a lower portion of the wafer chuck and for  
4 rotating the wafer chuck;

5 a rail coupled to a lower portion of the rotating shaft that provides a  
6 route for driving the rotating shaft in a direction parallel to a flat zone of the  
7 wafer loaded on the wafer chuck; and

8 a moving section operatively associated with the rotating shaft for  
9 driving the wafer chuck along the route provided by the rail.

1 13. The apparatus as claimed in claim 11, wherein the light  
2 source is installed such that the light is radiated over the peripheral area of  
3 the wafer and an outer area beyond an edge portion of the wafer.

1           14.     The apparatus as claimed in claim 11, wherein the inspecting  
2 section comprises:

3           a first detecting part installed remote from a rear surface of the  
4 peripheral area of the wafer to detect the light radiated toward an outer area  
5 beyond an edge portion of the wafer and to output an optical datum of the  
6 detected light;

7           a first determining part for receiving the optical datum from the first  
8 detecting part and comparing the optical datum with a reference optical  
9 datum to determine whether the optical datum is within a predetermined,  
10 allowable range of values; and

11          a first calculating part operatively associated with the first determining  
12 part for precisely calculating a position datum for the light source based on  
13 an error value of the optical datum received from the first determining part.

1           15.     The apparatus as claimed in claim 14, wherein the first  
2 detecting part comprises:

3           a sensing part for sensing an intensity of radiation of the light radiated  
4 toward the outer area beyond an edge portion of the wafer; and

5           an outputting part for outputting the intensity of radiation of the light  
6 sensed by the sensing part.

1           16.     The apparatus as claimed in claim 14, wherein the reference  
2 optical datum is an optical datum that is detected when the predetermined  
3 width of the peripheral area of the wafer is uniformly exposed to the light.

1           17.     The apparatus as claimed in claim 11, wherein the inspecting  
2 section comprises:

3           a second detecting part positioned horizontally remote from an edge  
4 portion of the wafer, which includes a portion to which the light is radiated,  
5 for detecting a distance between the edge portion of the wafer and a  
6 reference point positioned on an extension line extended from a center of  
7 the wafer beyond the edge portion of the wafer;

8           a second determining part for receiving a detected distance datum  
9 from the second detecting part and comparing the detected distance datum  
10 with a reference distance datum to determine whether the detected distance  
11 datum is within a predetermined, allowable range of values; and

12           a second calculating part operatively associated with the second  
13 determining part for precisely calculating a position of the light source and a  
14 position datum of the light source for radiating the light at the position based  
15 on an error value between the distance datum and the reference distance  
16 datum.

1           18.     The apparatus as claimed in claim 17, wherein the reference  
2 distance datum is a distance between the edge portion of the wafer and the  
3 reference point that is detected when the predetermined width of the  
4 peripheral area of the wafer is uniformly exposed to the light.

- 1            19.        The apparatus as claimed in claim 11, wherein the second
- 2            driving section receives a position datum of the light source from the
- 3            inspecting section and drives the light source in an inner or an outer
- 4            direction of the wafer in response to the position datum.

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